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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/623,038 | 07/18/2003 | Mitsuru Kitamura | U014728-4 | 6460 |
| 7590 | 11/26/2004 | | EXAMINER | |
| Ladas & Parry 26 West 61st Street New York, NY 10023 | | | STULTZ, JESSICA T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2873 | |

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/623,038 | KITAMURA ET AL. |
| | Examiner | Art Unit |
| | Jessica T Stultz | 2873 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 September 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 37-45 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 37-45 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 18 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/932,006.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

For applicant's information, examiner notes that the transmittal of the application filed July 18, 2003 includes a section to amend the specification to refer to the parent application 09/932,006 as shown in "Added pages for application...claimed" and the attached specification amendment filed September 16, 2004. However, it is noted that the parent application is now patent 6,618,190 and a reference to this fact should be added to the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 37-38, 40-41, and 43-44 are rejected under 35 U.S.C. 102(b) as being unpatentable by Satorius.

Specifically regarding claim 37, Satorius discloses an optical element consisting of a set of a plurality of three-dimensional cells (Column 5, line 16-Column 6, line 19, wherein the three-dimensional cells are pixels "76", Figures 1-3) and functioning without any electrical driving device (Column 5, line 16-Column 6, line 19, wherein the apparatus functions without an electrical driving device), the improvements wherein: a specific amplitude and a specific phase are defined in each individual cell (Column 5, line 16-Column 6, line 19 and Column 7, line 17-Column 8, line 46, wherein the pixels "76" and "156" have a specific phase and amplitude, respectively, Figures 3A and 3B) and said individual cells has a fixed specific optical property

determined by a material (Column 5, line 16-Column 6, line 19, wherein the pixels “76” are part of data layers “72”, which are made of a photorefractive material to record information, i.e. phase or amplitude information, on the pixels) so that, when incident light is provided to the cell, emission light is obtained by changing an amplitude and a phase of the incident light in accordance with the specific amplitude and the specific phase defined in the cell (Column 5, line 16-Column 6, line 19, wherein the incident light comes from light source “50”, and is altered based on the phase/amplitude information on pixels “76”, Figure 1); wherein each individual cell has an amplitude-modulating part provided with transmittance corresponding to a specific amplitude (Column 7, line 17-Column 8, line 46, wherein the transmittance of light is determined by the amplitude information on pixels ‘156’, Figures 1-3).

Specifically regarding claim 40, Satorius discloses an optical element consisting of a set of a plurality of three-dimensional cells (Column 5, line 16-Column 6, line 19, wherein the three-dimensional cells are pixels “76”, Figures 1-3) and functioning without any electrical driving device (Column 5, line 16-Column 6, line 19, wherein the apparatus functions without an electrical driving device), the improvements wherein: a specific amplitude and a specific phase are defined in each individual cell (Column 5, line 16-Column 6, line 19 and Column 7, line 17-Column 8, line 46, wherein the pixels “76” and “156” have a specific phase and amplitude, respectively, Figures 3A and 3B) and said individual cell has a fixed specific optical property determined by a material (Column 5, line 16-Column 6, line 19, wherein the pixels “76” are part of data layers “72”, which are made of a photorefractive material to record information, i.e. phase or amplitude information, on the pixels) so that, when incident light is provided to the cell, emission light is obtained by changing an amplitude and a phase of the incident light in

accordance with the specific amplitude and the specific phase defined in the cell (Column 5, line 16-Column 6, line 19, wherein the incident light comes from light source "50", and is altered based on the phase/amplitude information on pixels "76", Figure 1); but does not specifically disclose that each cell has an amplitude-modulating part provided with reflectivity corresponding to a specific amplitude. However, it is inherent from Satorius that the disclosed optical element further includes each cell having an amplitude-modulating part provided with reflectivity corresponding to a specific amplitude, this being reasonably based upon the fact that whatever light is not transmitted will be reflected and therefore, there will be a value of reflection, whether it be zero, 100 percent, or a value in between, related to this transmission.

Specifically regarding claim 43, Satorius discloses an optical element consisting of a set of a plurality of three-dimensional cells (Column 5, line 16-Column 6, line 19, wherein the three-dimensional cells are pixels "76", Figures 1-3) and functioning without any electrical driving device (Column 5, line 16-Column 6, line 19, wherein the apparatus functions without an electrical driving device), the improvements wherein: a specific amplitude and a specific phase are defined in each individual cell (Column 5, line 16-Column 6, line 19 and Column 7, line 17-Column 8, line 46, wherein the pixels "76" and "156" have a specific phase and amplitude, respectively, Figures 3A and 3B) and said individual cell has a fixed specific optical property determined by a material (Column 5, line 16-Column 6, line 19, wherein the pixels "76" are part of data layers "72", which are made of a photorefractive material to record information, i.e. phase or amplitude information, on the pixels) so that, when incident light is provided to the cell, emission light is obtained by changing an amplitude and a phase of the incident light in accordance with the specific amplitude and the specific phase defined in the cell (Column 5, line

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16-Column 6, line 19, wherein the incident light comes from light source “50”, and is altered based on the phase/amplitude information on pixels “76”, Figure 1); wherein each cell has an amplitude-modulating part provided with an effective area corresponding to a specific amplitude (Column 7, line 16-Column 8, line 32, wherein the effective area is “156” of data layer “72”, Figures 1-3).

Regarding claim 38, 41, and 44, Satorius further discloses an optical element as is disclosed above wherein each cell has a phase-modulating part, having a refractive index corresponding to a specific phase (Column 6, lines 20-37, wherein the data layer “72” is made of a photorefractive material with a specific refractive index).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39, 42, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satorius.

Regarding claim 39, 42, and 45, Satorius discloses an optical element as is disclosed above wherein each cell has a phase-modulating part, but does not specifically disclose that the phase-modulating part has an optical path length corresponding to a specific phase. However, examiner takes judicial notice that it is well known in the art of phase modulating devices for the a phase-modulating part to have an optical path length corresponding to a specific phase, for the purpose of providing the required light modulation based on the optical path of light through the

system. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical element of Satorius to include each cell having a phase-modulating part to have an optical path length corresponding to a specific phase, since it is well known in the art of phase modulating devices for the a phase-modulating part to have an optical path length corresponding to a specific phase, for the purpose of providing the required light modulation based on the optical path of light through the system.

Response to Arguments

Applicant's arguments with respect to claims 37-45 have been considered but are moot in view of the new ground(s) of rejection as shown above, in view of Satorius.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

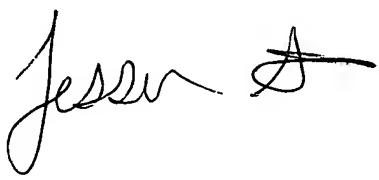
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T Stultz whose telephone number is (571) 272-2339. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jessica Stultz
Patent Examiner
AU 2873
November 18, 2004



JORDAN SCHWARTZ
PRIMARY EXAMINER